

A New Bicolored Species of *Leptaulax* (Coleoptera, Passalidae) from Borneo

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Abstract A new bicolored species of *Leptaulax* is described from Borneo under the name of *L. arayai* sp. nov. This species is distinct from all the other known species of this genus by having the following combination of characters: pronotum reddish-brown; elytra wholly black.

For the genus *Leptaulax* (Coleoptera, Passalidae), more than fifty species have been recognized from the Oriental and Australian regions (HINCKS & DIBB, 1935, 1958; VAN DOESBURG, 1966; VAN DOESBURG, JR., 1992; ENDRÖDI, 1971; NOMURA *et al.*, 1993; IWASE, 1995 a, b, 1996 a, b, c, 1997, 1998 a, b). Most passalid beetles have a unicolored dorsal surface varying from jet-black to dark reddish brown. Interestingly, however, the genus *Leptaulax* includes a few species having a bicolored (black and reddish brown) dorsal surface even in mature individuals; i.e., *L. elegans* IWASE, *L. glaber* (KIRSCH), *L. hirsutus* HINCKS and *L. pulchellus* (ARROW).

When we examined a series of passalid specimens collected by the Kyoto University expeditions to Sarawak, Borneo in 1989–1991, we found one *Leptaulax* species having a bicolored dorsal surface, which is distinct from the four known bicolored congeners. Later, we had opportunities to examine some additional specimens of this form from Sabah, Borneo. After a careful examination of these specimens, we concluded that this is new to science. Thus, we describe herewith a new bicolored species of *Leptaulax* from Borneo based on these specimens.

In describing the present new species, we adopt the terminology of GRAVELY (1914) and IWASE (1995 a, 1996 a, b).

Leptaulax arayai JOHKI et KON, sp. nov.

(Figs. 1–4)

Description of holotype. Male. Length from apical margin of clypeus to apices of elytra 18.1 mm. Body flat, polished; head and elytra black; pronotum, prosternum, mesosternum, metasternum, abdominal sternites and femora reddish-brown; tibiae and tarsi dark reddish-brown.

Antenna with three short and stout lamellae; first segment of antenna mat on dorsal surface. Outer margin of mandible with strong angle at the point a little anterior to the middle, moderately curved inwards in anterior portion, almost straight in posterior portion; upper lateral surface of mandible with strong longitudinal hollow in posterior portion; lowest terminal tooth larger than anterior lower tooth. Labrum rectangular, sparsely hairy on upper surface, more densely hairy on anterior and lateral margins, with anterior margin almost straight. Mentum polished, with some setiferous punctures in lateral portion; scar of mentum J-shaped; lateral portion slightly curved inwards at anterior end; anterior margin convex forwards in central portion. Hypostomal process

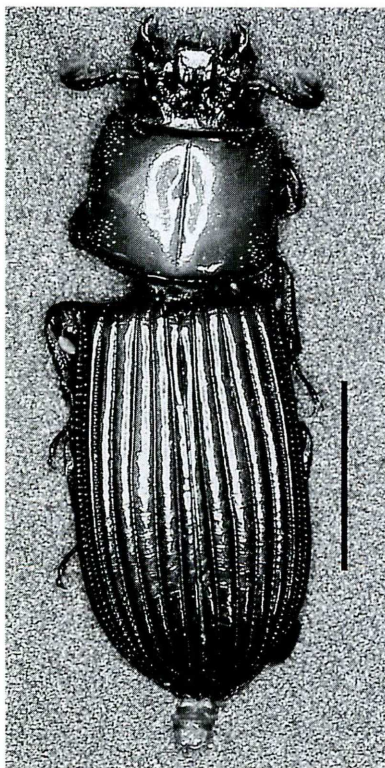


Fig. 1. Habitus of *Leptaulax arayai* sp. nov.; scale 5 mm.

hairless, smooth and polished, without groove. Anterior angle of head slightly prominent forwards; outer angle of canthus slightly protrudent forwards. Eye small, not projecting laterally beyond canthus; posterior half of eye covered with cuticle. Inner and outer tubercles adjacent to each other, the outer one slightly more prominent forwards than the inner one; distance between inner tubercles 2.3 times as long as that between inner and outer tubercles; outer lateral margin of outer tubercle with a few hairs in posterior portion; median tubercle distinct though small. Distal end of parietal ridge reaching supraorbital ridge; frontal ridge ending just behind inner tubercle; frontal area slightly wider than long, with setiferous punctures; median keel behind median tubercle distinct in anterior portion.

Pronotum rectangular, reddish-brown and darker near margins; lateral margin slightly curved inwards in anterior portion, slightly concave near lateral scar; anterior angle prominent forwards; posterior angle rounded; dorsal surface flat, strongly punctured in lateral portion, with distinct median sulcus. Prosternum mat in anterior portion close to head, smooth and polished between procoxae, hairless and rugged in posterior plate. Mesothoracic episternum mat; mesosternum impunctate and hairless, polished in central portion, mat in lateral scar, rugged in the area posterior to lateral scar. Central area of metasternum slightly punctured and wrinkled in central portion; posterior intermediate area punctured; anterior intermediate area weakly punctured; lateral area hairless, wholly wrinkled. Elytra polished except in punctures, slightly widened posteriorly, flat in dorsal surface, angular and hairless at humeri; lateral grooves with transverse punctures, much wider than adjacent ribs. Upper and outer surfaces of middle and hind tibiae polished.

Third to fifth visible abdominal sternites finely and densely punctured in lateral portion, more sparsely in central portion; sixth visible abdominal sternite finely punctured in lateral and anterior portions, impunctate in the posterior middle; posterior margin of fourth visible abdominal sternite emarginate in central portion; posterior

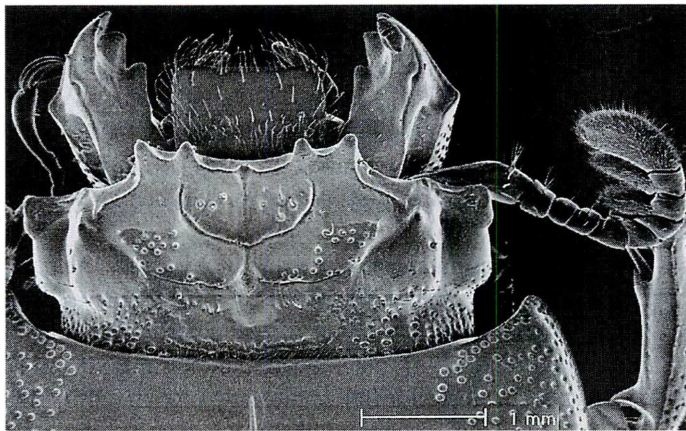
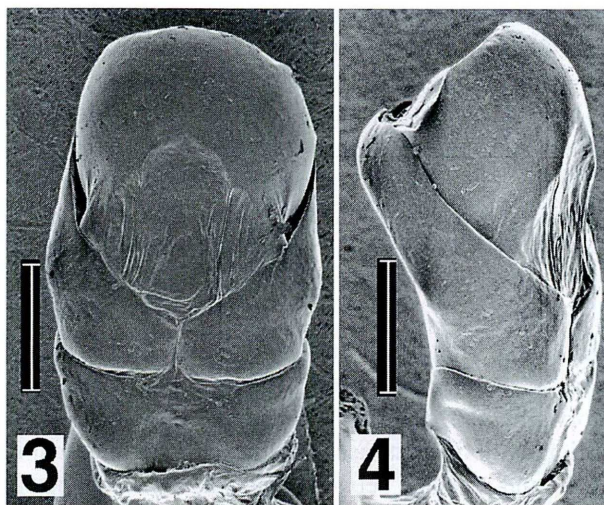


Fig. 2. Head of *Leptaulax arayai* sp. nov.; scale 1 mm.



Figs. 3–4. Male genitalia of *Leptaulax arayai* sp. nov.; scale 500 μ m; 3, ventral view; 4, left lateral view.

margin of sixth visible abdominal sternite without distinct ridge.

Penis with rhombus membranous area in ventro-proximal portion; parameres connected with each other both in dorsal and ventral sides, with distal margin obtusely V-shaped in ventral view, without lateral projection in ventral view; basal piece a little shorter than parameres in ventral view.

Variation. No sexual dimorphism is evident. Measurements for paratypes (mean $\pm$ SD, range), 17.8 mm $\pm$ 0.43, 16.9–18.6 mm (N=17).

Type series. Holotype: 1♂, Balio, Sarawak, Malaysia, 12–I–1991, K. ARAYA leg. Paratypes: 1♂, Sook Plantation, South of Keningau, Sabah, 22–23–XI–1981, Momin BINTI leg.; 1♂ and 4♀♀, Mt. Trus Madi, 1,200 m, Sabah, 8–25–IV–1992, M. SAWAI leg.; 1♂ and 1♀, Mt. Trus Madi, 1,400–1,600 m in alt., Sabah, Malaysia, 9–15–IX–1996; 1♂ and 5♀♀, Mt. Trus Madi, 1,400 m, Sabah, 16–IX–1997; 1♀, Mt. Trus Madi, 3–IV–1998; 1♀, ditto, 3–II–2001; 1♀, Gunung Emas, V–2001. The holotype is deposited in the collection of the Forest Department of Sarawak, Malaysia.

Etymology. The present species is named in honor of Dr. Kunio ARAYA, Kyushu University, who made intensive researches on the passalid beetles in Sarawak and collected the holotype.

Ecological note. The present species lives in colony under the bark of dead logs.

Notes. The present species can easily be distinguished from all the known congeneric species by the following combination of characters: pronotum reddish-brown even in fully matured individuals with black head and elytra; elytra wholly black; eye small, covered with cuticle in posterior half; outer angle of mandible distinct, located at the point anterior to the middle; upper lateral surface of mandible with strong longitudinal hollow in posterior portion.

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要 約

常喜 豊・近 雅博：ボルネオからのヒラタクロツヤムシ属の1新種。——ボルネオ島サラワク州およびサバ州より、クロツヤムシ科ヒラタクロツヤムシ属の1新種を *Leptaulax arayai* と名付けて記載した。本種は赤褐色の前胸背板と黒色の鞘翅をもつことにより、同属のすべての種から容易に区別される。

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